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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,362	12/28/2001	Mark Hennecken	2001-024-TAP	8722

7590 06/22/2006

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EXAMINER	
RODRIGUEZ, GLENDA P	

ART UNIT	PAPER NUMBER
2627	

DATE MAILED: 06/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/034,362	HENNECKEN ET AL.	
	Examiner	Art Unit	
	Glenda P. Rodriguez	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-6, 9-11, 13, 14, 15, 19, 23 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rooke (US Patent No. 5, 535, 067) in view of Shrinkler (US Patent No. 6, 222, 692).

Regarding Claim 1, Rooke teaches a method of establishing a data transfer rate between a moving storage medium and a read/write device, said method comprising the steps of:

Reading successive reference regions on the moving storage medium to derive a timing signal having a frequency that varies directly with variations in the speed of the moving storage medium (Col. 3, L. 45-52);

Processing the timing signal to provide a clock signal having a frequency that is a function of the timing signal frequency, and thereby represents the speed of the storage medium (Col. 3, L. 28-67 and Col. 4, L. 5-15);

And using the clock signal to determine the rate for writing data to the moving storage medium, so that rate is proportional to the speed of the moving storage medium (Col. 3, L. 28-67 and Col. 4, L. 5-15).

However, Rooke does not explicitly teach wherein the rate is not dependent on any pre-specified value. This limitation is taught by Shrinkler, wherein it teaches depending on the speed on the

medium in order to clock the writing signal in the Abstract and in Col. 3, L. 58 to Col. 4, L. 62. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify Rooke's invention with the teaching of Shrinkler in order to detect the clocking of the medium in order to reduce the clocking acquisition time as taught by Shrinkler in the Summary.

Apparatus claim (13 and 23) are drawn to the apparatus corresponding to the method of using same as claimed in claim (1). Therefore apparatus claims (13 and 23) correspond to method claim (1), and are rejected for the same reasons of obviousness as used above.

Regarding Claim 3, the combination of Rooke and Shrinkler teaches all the limitations of Claim 1. Rooke further teaches wherein locking a variable frequency oscillator to the timing signal to generate a data transfer rate (See Element 18).

Regarding Claim 4, the combination of Rooke and Shrinkler teaches all the limitations of Claim 3. Rooke further teaches wherein locking the variable-frequency oscillator includes bringing a phase-locked loop into lock (Col. 2, L. 43-54).

Regarding Claim 5, the combination of Rooke and Shrinkler teaches all the limitations of Claim 3. Rooke further teaches wherein the variable-frequency oscillator is a voltage-controlled oscillator (See Element 18).

Regarding Claim 6, the combination of Rooke and Shrinkler teaches all the limitations of Claim 1. Rooke further teaches wherein reading data from the moving storage medium at a rate proportional to the speed of the moving storage medium (Col. 3, L. 54-63).

Regarding Claim 9, the combination of Rooke and Shrinkler teaches all the limitations of Claim 1. Rooke further teaches that the medium is a disk as seen in Fig. 6, Element 1.

Regarding Claim 10, the combination of Rooke and Shrinkler teaches all the limitations of Claim 9. Rooke further teaches that the medium is a magnetic disk as taught in Col. 1, L. 21-24.

Regarding Claim 11, the combination of Rooke and Shrinkler teaches all the limitations of Claim 1. Rooke further teaches wherein the reference regions reside on at least one track from a plurality of tracks located on the moving storage medium (See Summary of Rooke).

Regarding Claim 14, the combination of Rooke and Shrinkler teaches all the limitations of Claim 13. Rooke further teaches wherein a filter, wherein the output of the ohase detector is coupled to the control input odf the voltage-controlled oscillator through the filter (See Fig. 5).

Regarding Claim 15, the combination of Rooke and Shrinkler teaches all the limitations of Claim 14. Rooke further teaches a digital filter (Element 27).

Regarding Claim 19, the combination of Rooke and Shrinkler teaches all the limitations of Claim 13. Rooke further teaches wherein the reference regions are located on at least one track (it is inherent that the servo timing regions are located at least at one track of the disk in order to adequately indicate the location of the head on the disk.).

Regarding Claims 24 and 25, the combination of Rooke and Shrinkler teaches all the limitations of Claim 23. Rooke further teaches a direction of motion (See the Summary, wherein Rooke teach that the medium has speed of rotation, therefore it must have motion in order to rotate.)

3. Claims 2, 7, 8, 12, 20-22 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rooke and Shrinkler as applied to claim 1, 13 and 23, repsecively above, and further in view of Albrecht et al. (US Patent No. 6, 021, 013).

Regarding Claim 2, the combiantion teach all the limitations of Claim 1. However, the combination does not explicitly teach wherein each of said reference regions extends in a second direction that is perpendicular to said first direction and respective reference regions are interleaved with timing based servo regions that extend along diagonals with respect to said first and second direction. This limitation is taught by Albrecht et al. in Figs. 4-6, wherein it teaches the servo timing patterns, one being vertical to the movement of the read head throughout the tape (See Fig. 2 of Albrecht et al.) and the other diagonal to the perpendicular servo pattern. It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention with the teaching of Albrecht et al. in order to the directionality of the servo regions in order to determine the timing in the medium and therefore, the position of the head as explained by Albrecht et al. in the Summary of the Invention.

Regarding Claims 7 and 8, the combination of teach all the limitations of Claim 1. However, the combination does not explicitly teach wherein the medium is a tape. Albrecht et al. teaches a magnetic tape medium as seen in Fig. 2.

Regarding Claim 12, the combination teach all the limitation of Claim 2. Rooke teaches reading the medium according to the speed of the moving medium (See to Summary of Rooke).

Regarding Claims 20-22, 27 and 28, the combination teach all the limitations of Claims 13 and 23, respectively. However, the combination does not explicitly teach wherein the reference regions are extended in a different direction from a direction of motion, that are perpendicular and that they are interleaved. Albrecht et al. teaches the servo reference timing regions to be in a different direction from a direction of motion, that are perpendicular and interleaved as observed in Figs. 2 and 4-6.

Regarding Claim 26, the combination teach all the limitations of Claim 24. However, the combination des not explicitly teach wherein the motion is linear. Albrecht et al. teaches in Fig. 2, a tape medium and head wherein its motion is linear according to the tape length.

4. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rooke and Shrinkler as applied to claim 14 above, and further in view of Zortea et al. (US Patent No. 6, 389, 090). Rooke teach all the limitations of Claim 14. However, Rooke does not explicitly teach wherein the filter is an analog filter. This feature is well known in the art as disclosed by Zortea et al., wherein it teaches the use of a analog filter in a phase detector (Pat. No. 6, 389, 090; Col. 2, L. 15-25). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination's invention in order to generate pulses which are proportional to the phase errors (Pat. No. 6, 389, 090; Col. 2, L. 15-25).

5. Claim 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rooke and Shrinkler as applied to claim 13 above, and further in view of Contreras et al. (US Patent No. 5, 995, 306).

Regarding Claims 17 and 18, the combination teach all the limitations of Claim 13. However, the combination does not explicitly teach wherein a memory buffer, a write head and a second read head. Contreras et al. further teach a memory buffer and a write head among a plurality of read/write heads that read/write data from the memory buffer to the moving storage medium at a rate proportional to the data transfer rate (Col. 41, L. 42-57). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combnation's invention with the teaching of Contreras et al. in order to control the data.

6. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Rooke and Shrinkler as applied to claim 23 above, and further in view of Gillingham et al. (US Patent No. 6, 075, 666). Rooke teach all the limitations of Claim 23. However, Rooke does not explicitly teach wherein the reference regions are recorded at a first frequency and the servo bands are recorded at a second frequency that is distinct from the first frequency. However, this feature is well known in the art as disclosed by Gillingham et al., wherein it teaches regions that are recorded at a first frequency and the servo bands are recorded at a second frequency that is distinct from the first frequency (Pat. No. 6, 075, 666; Col. 2, L. 57 to Col. 3, L. 22. Gillingham et al. teach the use of plural frequencies in order to monitor the tape head position.). It would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to modify the combination' s invention in order to control the head relative to the position to the tape.

Response to Arguments

7. Applicant's arguments with respect to claims 1-8, 11-18, and 20-29 have been considered but are moot in view of the new ground(s) of rejection due to the newly amended Claims. Claims 9-10, and 19 which were absent in the previous Office Action, are rejected under the same art.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenda P. Rodriguez whose telephone number is (571) 272-7561. The examiner can normally be reached on Monday thru Thursday: 7:00-5:00; alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

gpr
06/05/06.

WAYNE YOUNG
SUPERVISORY PATENT EXAMINER